

(19)



(11)

EP 1 921 023 A1

(12)

EUROPEAN PATENT APPLICATION

(43)

Date of publication:
14.05.2008 Bulletin 2008/20

(51)

Int Cl.:
B65D 81/38 (2006.01)

(21)

Application number: **06255738.4**

(22)

Date of filing: **08.11.2006**

(84)

Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI
SK TR**
Designated Extension States:
AL BA HR MK RS

(72)

Inventor: **Lo, Chih-Hsien**
Tainan Hsien (TW)

(74)

Representative: **Jenkins, Peter David et al**
Page White & Farrer
Bedford House
John Street
London, WC1N 2BF (GB)

(71)

Applicant: **President Packaging Industrial Corp.**
Tainan Hsien (TW)

(54)

Disposable drinking cup

(57)

A disposable drinking cup includes: a cup body (3) having a surrounding wall (32); and an insulating sleeve (4) sleeved securely on the surrounding wall (32) and having a corrugated part (40) that includes a plurality of protruding portions (41) displaced angularly around the surrounding wall (32). Each of the protruding portions (41) extends outwardly and radially from the surrounding wall (32) so as to define an air pocket (44) therebetween.

The air pocket (44) is defined by a pocket-defining wall that has a cross-section (441) which is substantially trapezoidal in shape. The corrugated part (40) further includes a plurality of non-rounded flat connecting portions (42), each of which is bonded to the surrounding wall (32), and each of which extends between and cooperates with the two adjacent ones of the protruding portions (41) to define a recess (421) thereamong.

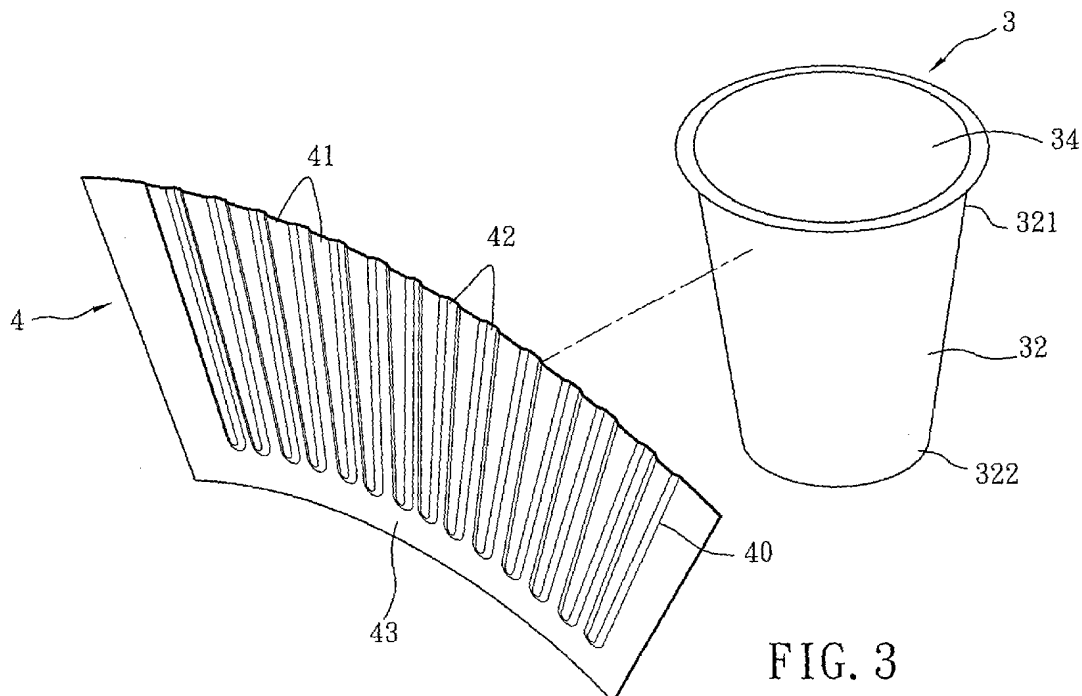


FIG. 3

Description

[0001] This invention relates to a disposable drinking cup, more particularly to a disposable drinking cup including a cup body and an insulating sleeve sleeved on the cup body.

[0002] Figs. 1 and 2 illustrate a conventional disposable drinking cup 2 that includes a cup body 21 and an insulating sleeve 22 sleeved on the cup body 21. The insulating sleeve 22 has a planar sheet 221 bonded to the cup body 21, and a structured sheet 222 bonded to the planar sheet 221. The structured sheet 222 has a corrugated structure including rounded outward protrusions 2221 and rounded inward protrusions 2222 that are alternately disposed with the outward protrusions 2221. Each of the outward protrusions 2221 cooperates with the planar sheet 221 to define an air pocket 23 therebetween. The air pockets 23 thus formed in the disposable drinking cup 2 provide a thermal insulating effect. The conventional drinking cup 2 is disadvantageous in that, since the contact area between each of the rounded inward protrusions 2222 and the planar sheet 221 is relatively small, undesired peeling of the structured sheet 222 from the planar sheet 221 is likely to occur. Moreover, manufacturing of the disposable drinking cup 2 requires assembling the structured sheet 222 and the planar sheet 221 to form the insulating sleeve 22 first and then assembling the insulating sleeve 22 and the cup body 21, which results in an increase in the manufacturing costs and time.

[0003] The object of the present invention is to provide a disposable drinking cup that can overcome the aforesaid drawback of the prior art.

[0004] According to this invention, there is provided a disposable drinking cup that comprises: a cup body having a surrounding wall; and an insulating sleeve sleeved securely on the surrounding wall of the cup body and having a corrugated part that includes a plurality of protruding portions displaced angularly around the surrounding wall and spaced apart from each other. Each of the protruding portions extends outwardly and radially from the surrounding wall so as to define an air pocket therebetween. The air pocket is defined by a pocket-defining wall that has a cross-section which is substantially trapezoidal in shape. The corrugated part further includes a plurality of non-rounded flat connecting portions, each of which extends between and separates two adjacent ones of the protruding portions apart, each of which is bonded to the surrounding wall, and each of which cooperates with the two adjacent ones of the protruding portions to define a recess thereamong.

[0005] Other features and advantages of the present invention will become apparent in the following detailed description of the preferred embodiments of the invention, with reference to the accompanying drawings, in which:

Fig. 1 is an exploded perspective view of a conven-

tional disposable drinking cup;

Fig. 2 is a schematic top view of the conventional disposable drinking cup;

Fig. 3 is an exploded perspective view of the first preferred embodiment of a disposable drinking cup according to this invention;

Fig. 4 is a sectional side view of the first preferred embodiment;

Fig. 5 is a sectional top view of the first preferred embodiment;

Fig. 6 is an exploded perspective view of the second preferred embodiment of the disposable drinking cup according to this invention;

Fig. 7 is a sectional side view of the second preferred embodiment; and

Fig. 8 is a perspective view of the third preferred embodiment of the disposable drinking cup according to this invention.

[0006] Before the present invention is described in greater detail with reference to the accompanying preferred embodiments, it should be noted herein that like elements are denoted by the same reference numerals throughout the disclosure.

[0007] Figs. 3 to 5 illustrate the first preferred embodiment of a disposable drinking cup according to this invention. The disposable drinking cup includes: a cup body 3 having a bottom wall 33 and a surrounding wall 32 extending from the bottom wall 33 and cooperating with the bottom wall 33 to define an inner space 34 therebetween; and an insulating sleeve 4 sleeved securely on the surrounding wall 32 of the cup body 3 and having a corrugated part 40 that includes a plurality of protruding portions 41 displaced angularly around the surrounding wall 32 and spaced apart from each other. Each of the protruding portions 41 is tapered and extends outwardly and radially from the surrounding wall 32 so as to define an air pocket 44 therebetween. The air pocket 44 is defined by a pocket-defining wall that has a cross-section 441 which is substantially trapezoidal in shape. The corrugated part 40 further includes a plurality of non-rounded flat connecting portions 42, each of which extends between and separates two adjacent ones of the protruding portions 41 apart, each of which is bonded to the surrounding wall 32, and each of which cooperates with the two adjacent ones of the protruding portions 41 to define a recess 421 thereamong.

[0008] In this embodiment, the cross-section 441 of the pocket-defining wall has a cup side 4411 defined by the surrounding wall 32, and a distal side 4412 opposite to the cup side 4411 and having a length less than that of the cup side 4411 and greater than that of each of the non-rounded flat connecting portions 42. The cross-section 441 of the pocket-defining wall further has two opposing inclined sides 4413, each of which is straight, each of which interconnects the cup side 4411 and the distal side 4412, and each of which preferably has a length less than that of each of the non-rounded flat connecting por-

tions 42.

[0009] In this embodiment, the insulating sleeve 4 further has a non-corrugated end part 43 that extends from the corrugated part 40 and that is bonded to a bottom end portion of the surrounding wall 32. The surrounding wall 32 of the cup body 3 has top and bottom ends 321, 322. Each of the protruding portions 41 has a top open end 411 that is disposed adjacent to the top end 321 of the surrounding wall 32 and that is in fluid communication with the air pocket 44 defined by said each of the protruding portions 41, and a bottom closed end 412 that is disposed adjacent to the bottom end 322 of the surrounding wall 32 and that seals a bottom side of the air pocket 44 defined by said each of the protruding portions 41.

[0010] Figs. 6 and 7 illustrate the second preferred embodiment of the disposable drinking cup according to this invention. The second preferred embodiment differs from the previous embodiment in that the insulating sleeve 4 has solely the corrugated part 40 (i.e., without the non-corrugated part 43) and that each of the protruding portions 41 has a bottom open end 412 that is disposed adjacent to the bottom end 322 of the surrounding wall 32 and that is in fluid communication with the air pocket 44 defined by said each of the protruding portions 41.

[0011] Fig. 8 illustrates the third preferred embodiment of the disposable drinking cup according to this invention. The third preferred embodiment differs from the previous embodiments in that the insulating sleeve 4 is coated with a decorative film 45 having at least one indicia 451 printed thereon so as to enhance the appearance of the disposable drinking cup.

Claims

1. A disposable drinking cup **characterized by:**

a cup body (3) having a surrounding wall (32); and
an insulating sleeve (4) sleeved securely on said surrounding wall (32) of said cup body (3) and having a corrugated part (40) that includes a plurality of protruding portions (41) displaced angularly around said surrounding wall (32) and spaced apart from each other, each of said protruding portions (41) extending outwardly and radially from said surrounding wall (32) so as to define an air pocket (44) therebetween, said air pocket (44) being defined by a pocket-defining wall that has a cross-section (441) which is substantially trapezoidal in shape, said corrugated part (40) further including a plurality of non-rounded flat connecting portions (42), each of which extends between and separates two adjacent ones of said protruding portions (41) apart, each of which is bonded to said surrounding wall (32), and each of which cooperates with the two adjacent ones of said protruding portions (41)

to define a recess (421) thereamong.

2. The disposable drinking cup of claim 1, **characterized in that** said cross-section (441) of said pocket-defining wall has a cup side (4411) defined by said surrounding wall (32), and a distal side (4412) opposite to said cup side (4411) and having a length less than that of said cup side (4411) and greater than that of each of said non-rounded flat connecting portions (42).
3. The disposable drinking cup of claim 2, further **characterized in that** said cross-section (441) of said pocket-defining wall further has two opposing inclined sides (4413), each of which is straight, each of which interconnects said cup side (4411) and said distal side (4412), and each of which has a length less than that of each of said non-rounded flat connecting portions (42).
4. The disposable drinking cup of claim 1, **characterized in that** said surrounding wall (32) of said cup body (3) has top and bottom ends (321, 322), each of said protruding portions (41) having a top open end (411) that is disposed adjacent to said top end (321) of said surrounding wall (32) and that is in fluid communication with said air pocket (44) defined by said each of said protruding portions (41), and a bottom closed end (412) that is disposed adjacent to said bottom end (322) of said surrounding wall (32) and that seals a bottom side of said air pocket (44) defined by said each of said protruding portions (41).
5. The disposable drinking cup of claim 1, **characterized in that** said surrounding wall (32) of said cup body (3) has top and bottom ends (321, 322), each of said protruding portions (41) having a top open end (411) that is disposed adjacent to said top end (321) of said surrounding wall (32) and that is in fluid communication with said air pocket (44) defined by said each of said protruding portions (41), and a bottom open end (412) that is disposed adjacent to said bottom end (322) of said surrounding wall (32) and that is in fluid communication with said air pocket (44) defined by said each of said protruding portions (41).
6. The disposable drinking cup of claim 1, **characterized in that** said insulating sleeve (4) is coated with a decorative film (45) having at least one indicia (451) printed thereon.

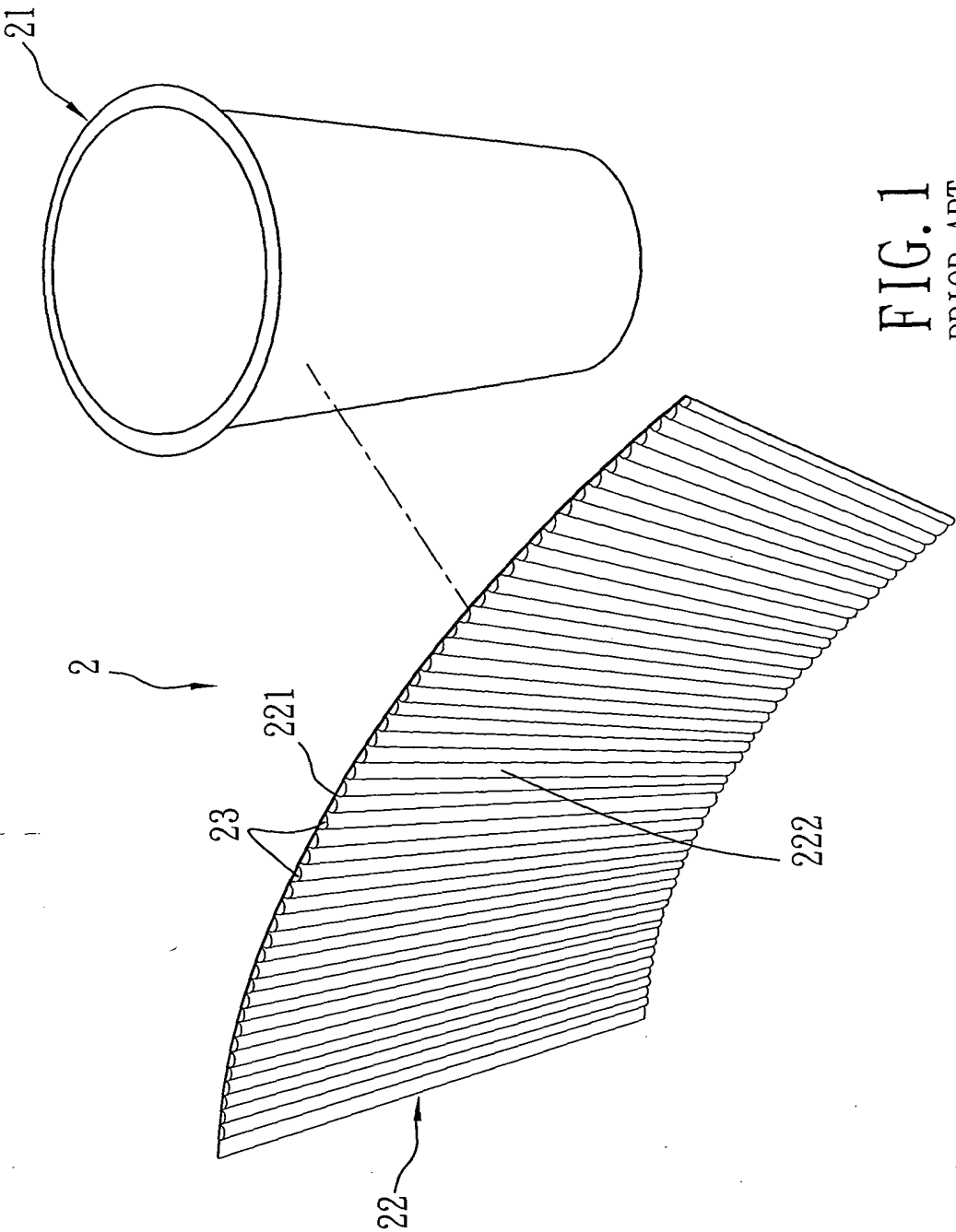


FIG. 1
PRIOR ART

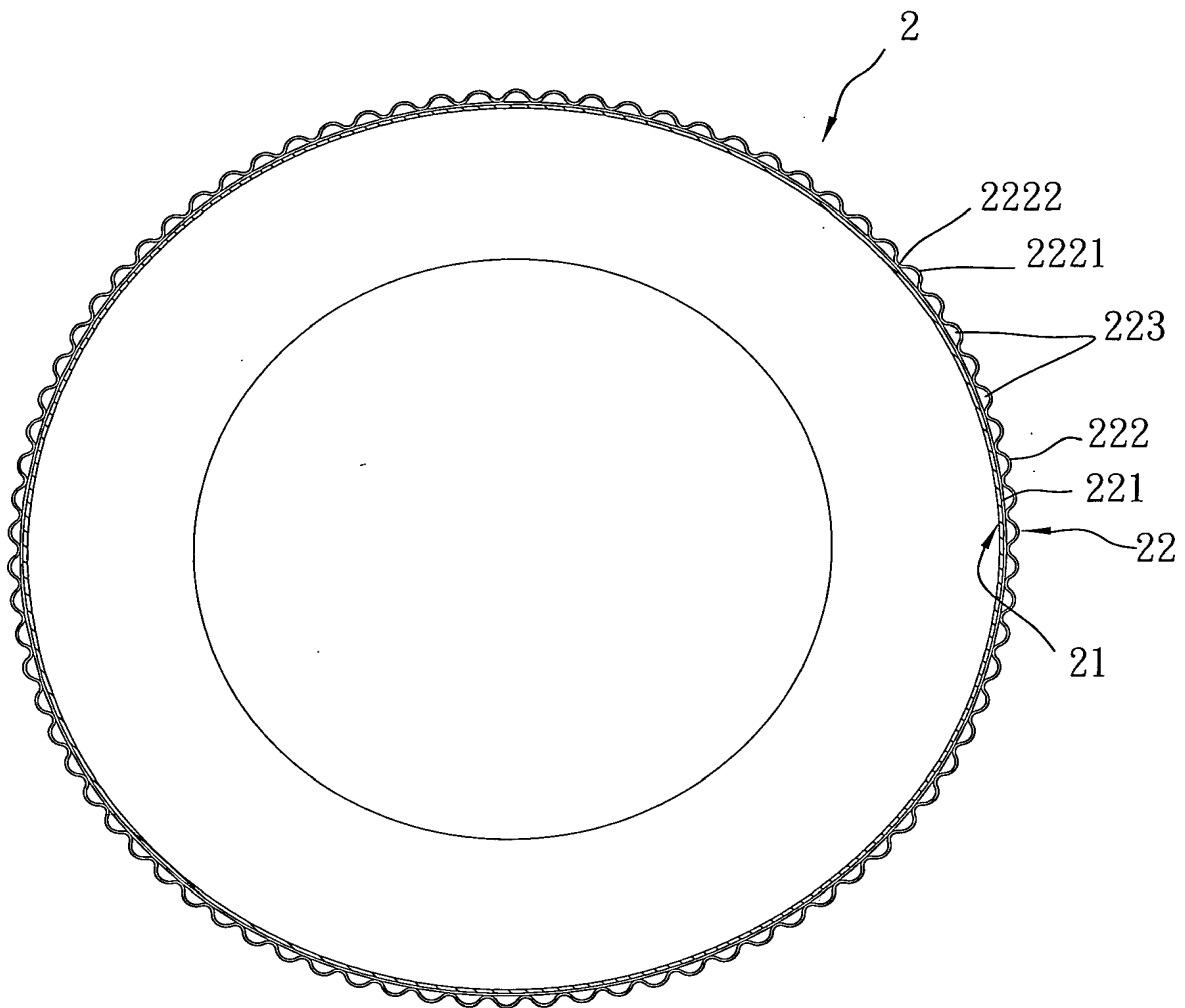


FIG. 2
PRIOR ART

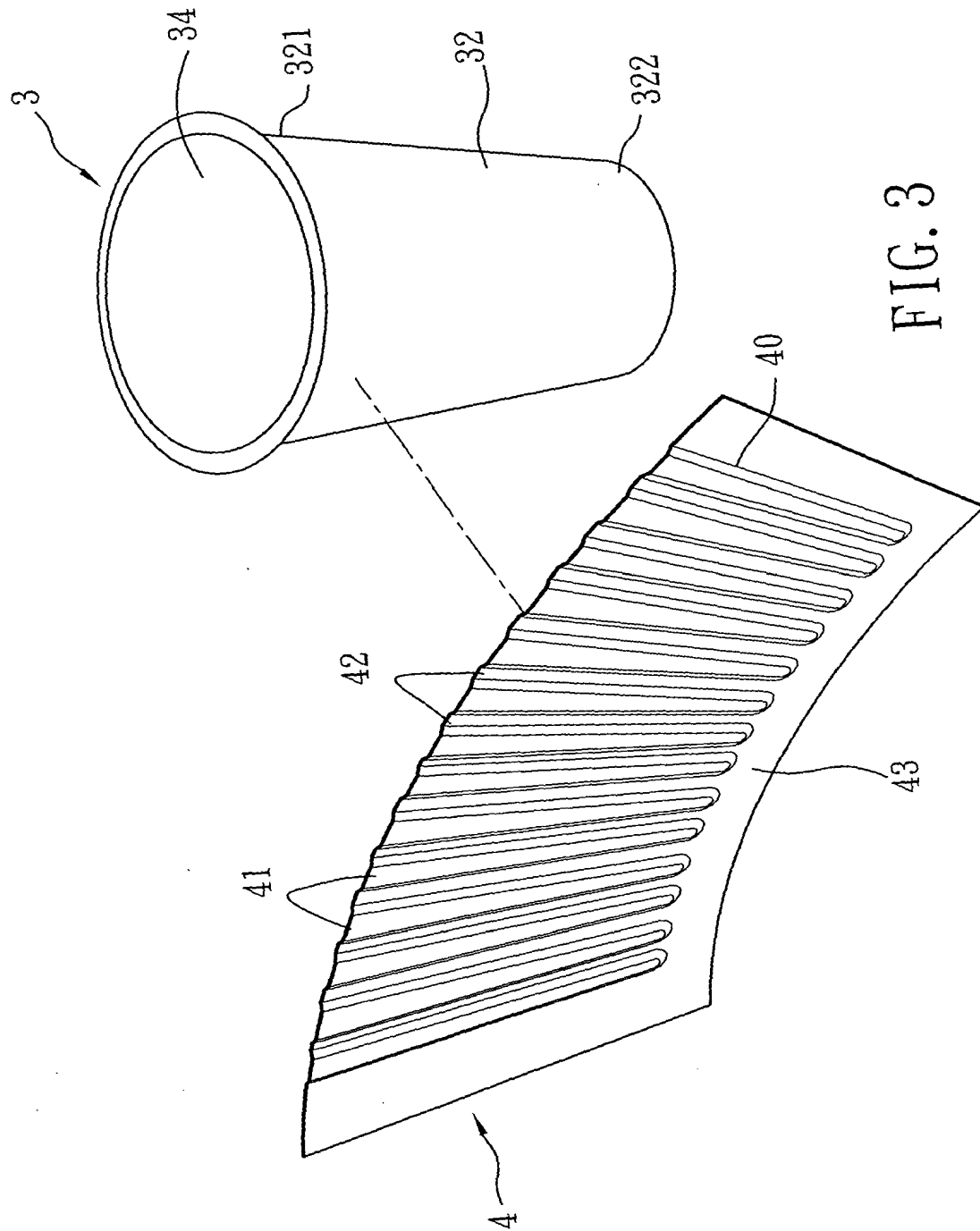


FIG. 3

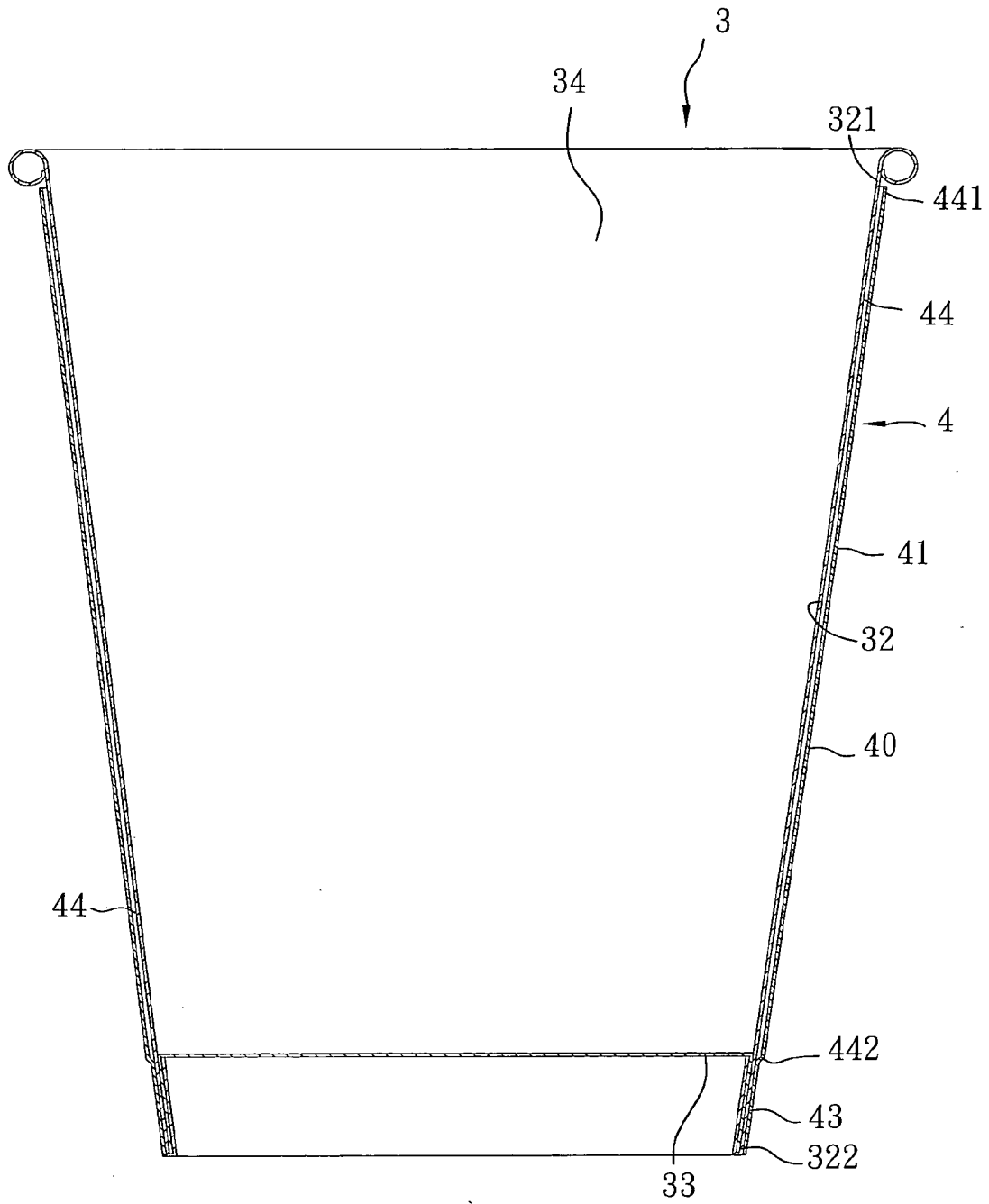


FIG. 4

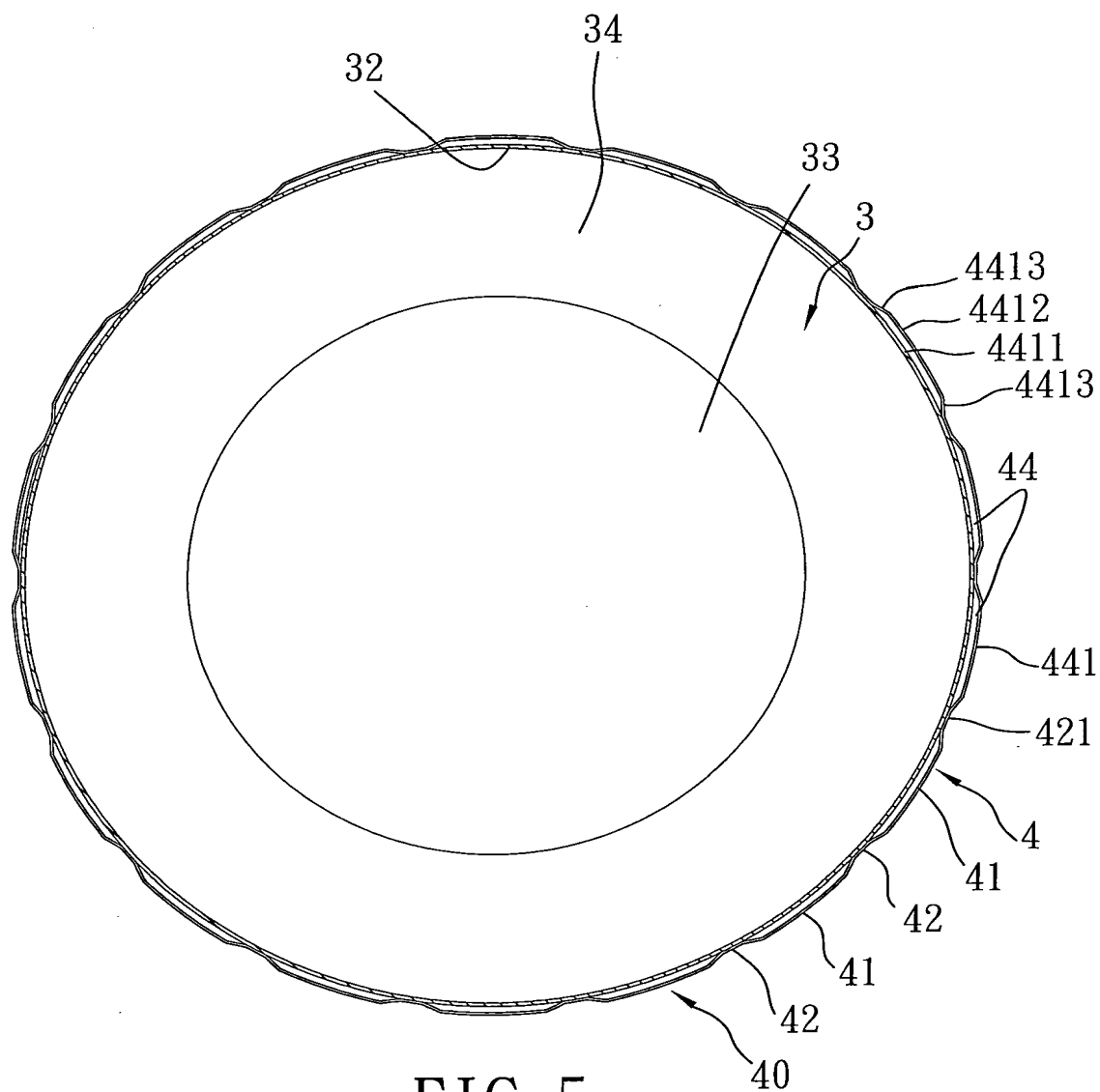
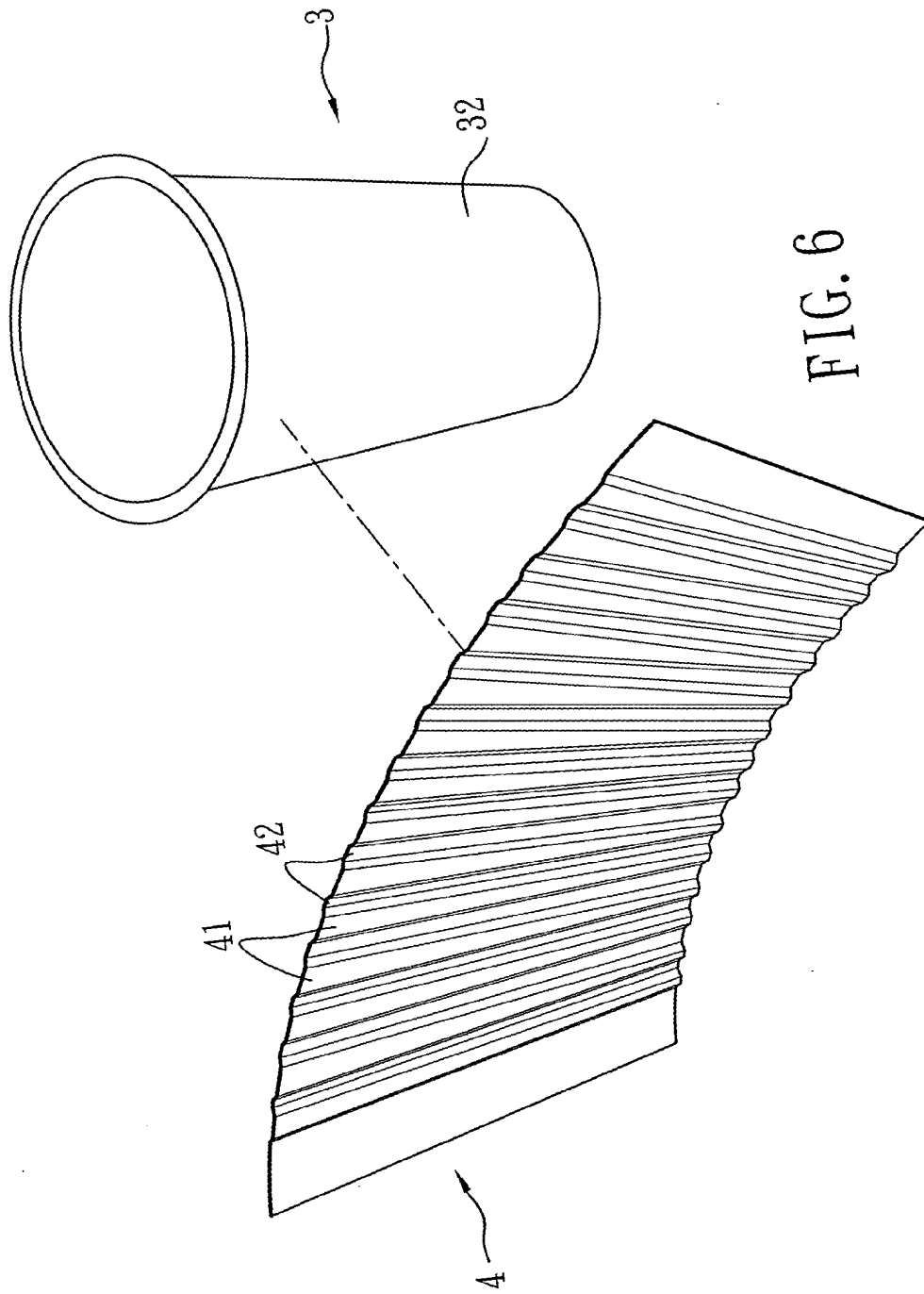


FIG. 5



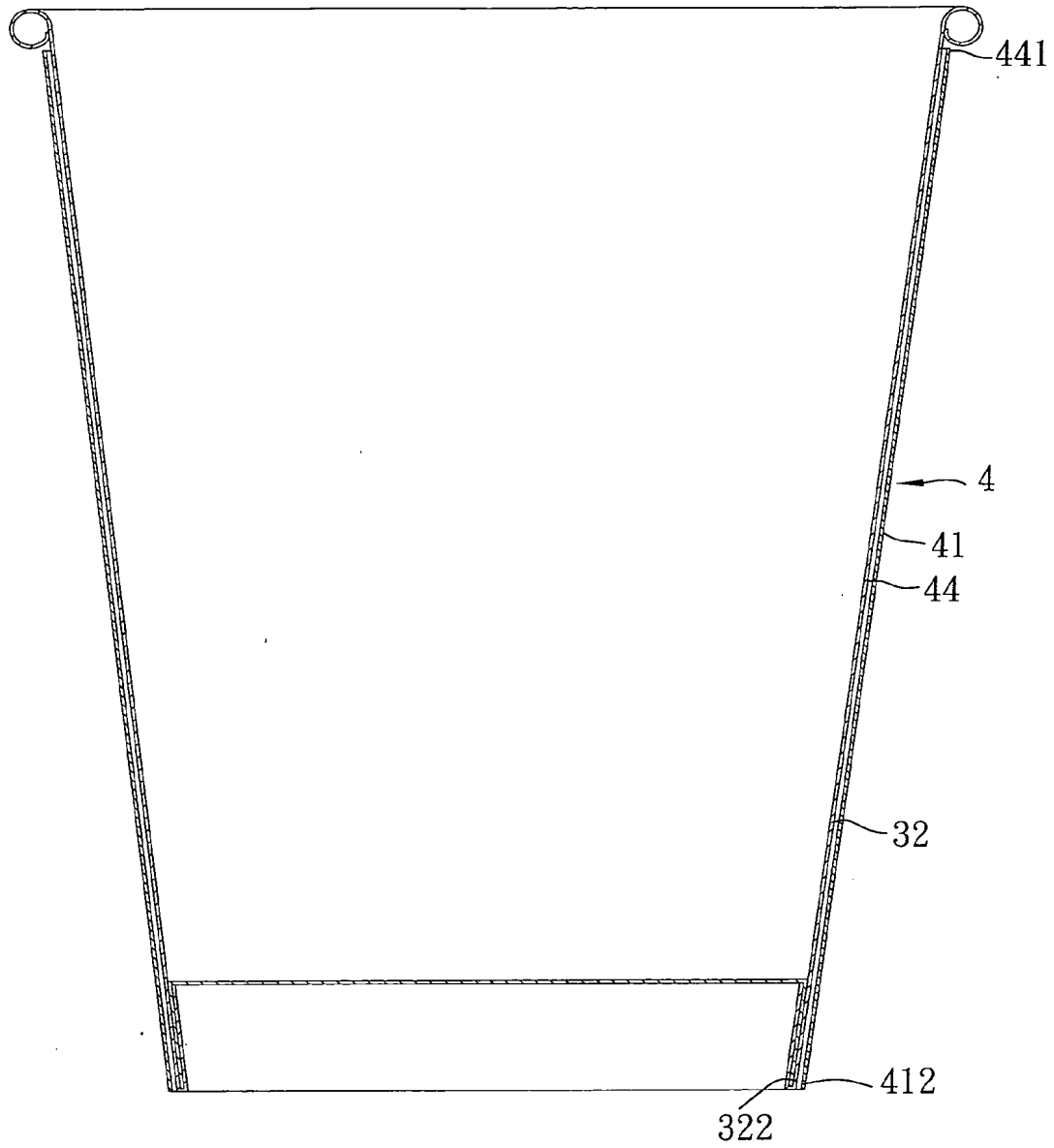


FIG. 7

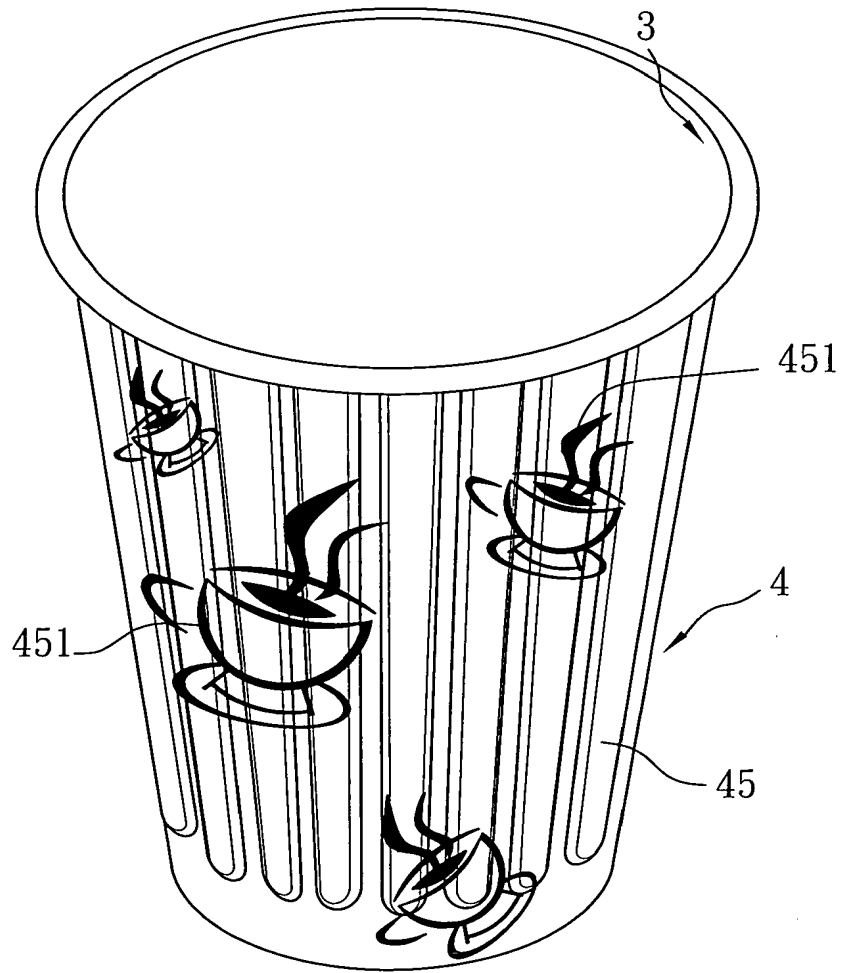


FIG. 8



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 25 5738

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 6 116 503 A (VARANO RICHARD F [US]) 12 September 2000 (2000-09-12) * abstract; figures 10-12 * -----	1-5	INV. B65D81/38
X	JP 08 113274 A (SANYO PACKS KK) 7 May 1996 (1996-05-07) * abstract; figures 2,6 * -----	1-5	
X	JP 08 207969 A (SANYO PACKS KK) 13 August 1996 (1996-08-13) * abstract; figures 2,6 * -----	1-5	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			B65D A47G
Place of search		Date of completion of the search	Examiner
Munich		4 April 2007	Alff, Robert
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

1
EPO FORM 1503 03.02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 06 25 5738

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

04-04-2007

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6116503	A	12-09-2000	US 6364201 B1	02-04-2002
JP 8113274	A	07-05-1996	JP 2920598 B2	19-07-1999
JP 8207969	A	13-08-1996	NONE	

EPO FORM P/0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82